CLAIMS

What is claimed is:

1. A method for generating accounting data, the method comprising:

identifying an access control list including a plurality of access control list entries,

5   a subset of the plurality of access control list entries identifying accounting requests;

associating accounting mechanisms with each of said access control list entries in the subset of the plurality of access control list entries identifying accounting requests;

identifying an item;

identifying a particular one of said accounting mechanism corresponding to the

10   item; and

updating said accounting mechanism corresponding to the item.

2. The method of claim 1, wherein the item corresponds to one or more fields of a received packet.

3. The method of claim 2, wherein the item further includes at least one

15   autonomous system number, said at least one autonomous system number identify a set of communication devices under a single administrative authority.

4. The method of claim 1, wherein at least one of said accounting mechanisms is associated with at least two different access control list entries in the subset of the plurality of access control list entries identifying accounting requests.

5. A method for generating accounting data, the method comprising:

identifying a lookup value;

performing a lookup operation in an associative memory based on the lookup value to identify an associative memory result;

5   performing a lookup operation on an adjunct memory based on the associative memory result to identify a counter indication, wherein at least two entries within the adjunct memory include a same counter indication; and

updating one of a plurality of counters based on the counter indication.

6. The method of claim 5, wherein said at least two entries are determined based 10   on a corresponding specification in an access control list.

7. The method of claim 5, wherein the lookup value includes at least one autonomous system number, said at least one autonomous system number identify a set of communication devices under a single administrative authority.

8. A method for generating accounting data, the method comprising:

15   identifying a lookup value, wherein the lookup value includes at least one autonomous system number, said at least one autonomous system number identify a set of communication devices under a single administrative authority;

performing a lookup operation in an associative memory based on the lookup value to identify an associative memory result;

20   performing a lookup operation on an adjunct memory based on the associative memory result to identify a counter indication; and

updating one of a plurality of counters based on the counter indication.

9. The method of claim 8, wherein said at least two entries are determined based on a corresponding specification in an access control list.

42

10. An apparatus for generating accounting data, the apparatus comprising:

a lookup word generation mechanism for identifying a lookup value;

an associative memory for generating an associative memory result based on the lookup value;

5   an adjunct memory for generating a counter indication based on the associative memory result, at least two entries of the adjunct memory configured to generate a same counter indication value; and

a plurality of counters for maintaining counts and for updating one of the plurality of counters based on the counter indication.

10   11. The apparatus of claim 10, wherein said at least two entries are determined based on a corresponding specification in an access control list.

12. The apparatus of claim 10, wherein the lookup word generate identifies at least one autonomous system number, said at least one autonomous system number identify a set of communication devices under a single administrative authority; and

15   wherein the lookup word includes said at least one autonomous system number.

13. A computer-readable medium containing computer-executable instructions for performing steps for generating accounting data, said steps comprising:

identifying an access control list including a plurality of access control list entries, a subset of the plurality of access control list entries identifying accounting requests;

20   associating accounting mechanisms with each of said access control list entries in the subset of the plurality of access control list entries identifying accounting requests;

identifying an item;

identifying a particular one of said accounting mechanism corresponding to the item; and

25   updating said accounting mechanism corresponding to the item.

14. The computer-readable medium of claim 13, wherein the item corresponds to one or more fields of a received packet.

15. The computer-readable medium of claim 14, wherein the item further includes at least one autonomous system number, said at least one autonomous system number

5   identify a set of communication devices under a single administrative authority.

16. An apparatus for generating accounting data, the apparatus comprising:
   means for identifying a lookup value;
   means for performing a lookup operation in an associative memory based on the lookup value to identify an associative memory result;

10   means for performing a lookup operation on an adjunct memory based on the associative memory result to identify a counter indication, wherein at least two entries within the adjunct memory include a same counter indication; and
   means for updating one of a plurality of counters based on the counter indication.

17. The apparatus of claim 16, wherein said at least two entries are determined

15   based on a corresponding specification in an access control list.

18. The apparatus of claim 16, wherein the lookup value includes at least one autonomous system number, said at least one autonomous system number identify a set of communication devices under a single administrative authority.

44

19. An apparatus for generating accounting data, the apparatus comprising:

means for identifying a lookup value, wherein the lookup value includes at least one autonomous system number, said at least one autonomous system number identify a set of communication devices under a single administrative authority;

5   means for performing a lookup operation in an associative memory based on the lookup value to identify an associative memory result;

means for performing a lookup operation on an adjunct memory based on the associative memory result to identify a counter indication; and

means for updating one of a plurality of counters based on the counter indication.

10   20. The apparatus of claim 19, wherein said at least two entries are determined based on a corresponding specification in an access control list.

15